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Myobia kobayashii spec. nov. (Acarina, Myobiidae) Parasitic
on *Apodemus giliacus* (Mammalia, Muridae)

With 2 Text-figures

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ABSTRACT *Myobia kobayashii* spec. nov. parasitic on *Apodemus giliacus* is described. Karafuto-akanezumi-kemochidani is proposed as the Japanese name of the mite. This new species closely resembles *M. apodemi* Uchikawa, 1973, parasitic on *Apodemus argenteus* in Honshu and Hokkaido.

Kobayashi and Hayata (1971) reviewed the mice of the genus *Apodemus* in Hokkaido, which had theretofore been considered to comprise only two forms, *Apodemus argenteus* and *A. speciosus ainu*. They added *A. giliacus* (Thomas, 1907) as a full species to the fauna of Hokkaido. Recently, Mizushima and Yamada (1974) reported that *A. giliacus* was the most abundant species among the three *Apodemus* mice at Naganuma, central Hokkaido, during the period between 1969 and 1972.

As we have no records on ectoparasites of *A. giliacus*, the present authors designed to collect materials from this mouse. The mouse was caught from September 18 through 20 in 1974, at Naganuma. A new *Myobia* mite was included in the insects and acari parasitizing the mouse.

Myobia kobayashii spec. nov.

(Figs. 1 and 2)

[Japanese name: Karafuto-akanezumi-kemochidani]

Female (Fig. 1). Measurements as in Table 1.

Dorsum (Fig. 1A). Setal arrangement, nature and length as in Fig. 1A and

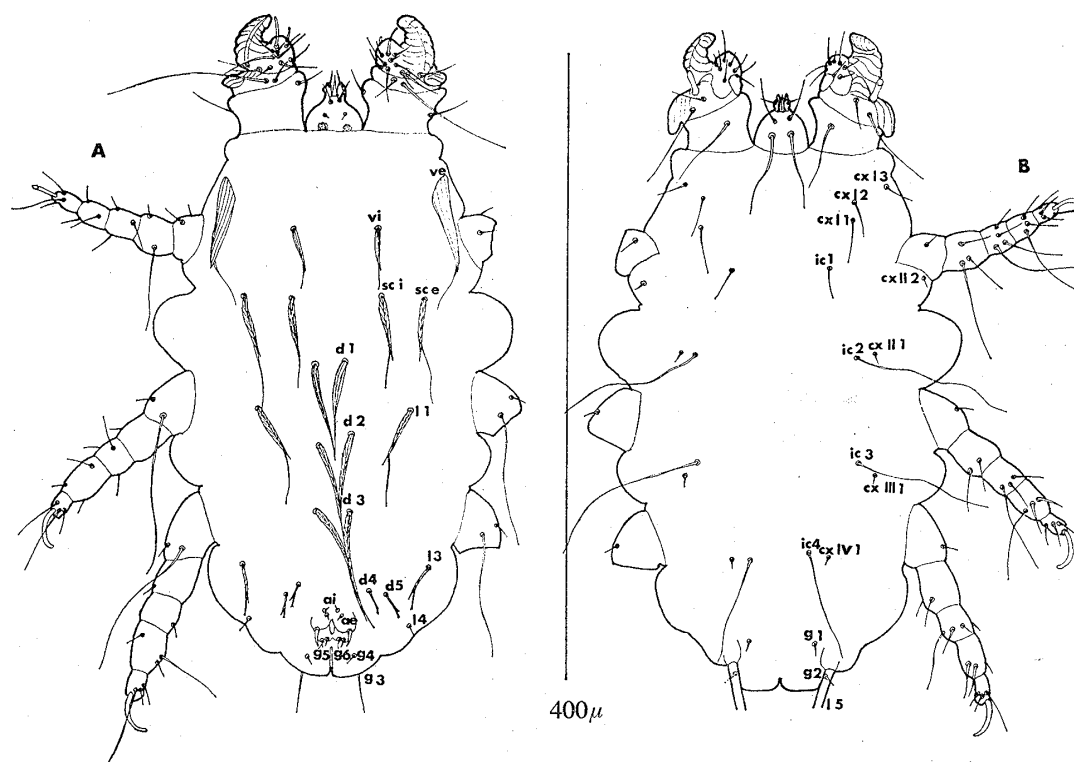


Fig. 1. Female of *Myobia kobayashii* spec. nov.—A, Dorsal view; B, ventral view.

Table 1. Vertical internal, *vi*, and external, *ve*, setae foliaceous and striated basally, barbed and tapered. Scapular internal, *sc i*, and external, *sc e*, setae the same in nature as *vi*, the latter distinctly longer than the former. Dorsal setae, *d* 1–3, expanded, striated and smoothly tapered; *d* 4–5 minute, barbed and with blunt tips. Lateral seta, *l* 1, the same in nature as *vi*; *l* 2 absent; *l* 3 with blunt tip barbed; *l* 4 minute, with blunt tip; *l* 5 situated ventrally. Six pairs of genital setae, *g* 1–6, present, of which *g* 1–2 are situated ventrally and *g* 3 is developed moderately. Two pairs of anal setae, *ai* and *ae*, present.

Venter (Fig. 1B). Four pairs of intercoxal setae, *ic* 1–4, present; first pair short, and other pairs fine and long. Coxae I–IV bearing 3, 2, 1 and 1 setae, respectively.

Gnathosoma (Fig. 1A and B). Two pairs of minute setae on dorsal surface. One pair each of hypostomal and gnathosomal setae on ventral surface; the latter longer than the former.

Legs (Fig. 1A and B). Leg I with 3 free segments, trochanter, femur and genu; tibia and tarsus fused and forming a bill-like projection ventrally on genu; femur and genu each with a clasping organ, a chitinized striated formation. Other legs with 5 segments. Chaetotaxy on coxal area; trochanter–femur–genu–tibia–tarsus as follows: Leg I, 3; 3–5–18; leg II, 2; 3–5–7–6–6; legs III and IV, 1; 3–3–5–6–6. Two each of solenidia on genu I and tarsus II.

Table 1
Measurements (ranges and means in parentheses) in micron of the body size and setal length, and the nature of the setae on the dorsum in the female.

<i>M. kobayashii</i> spec. nov. (n=10)		Nature of setae		
Body length inclusive of gnathosoma	360–415 (391.5)	B: barbed; N: nude; b: with blunt tip*; p: with pointed tip*		
Body width	215–230 (221.7)	<i>M. kobayashii</i> spec. nov.	<i>M. apodemi</i>	<i>M. nodae</i>
Seta				
<i>vi</i>	35– 40 (36.5)	Bp	Bb	Bb
<i>ve</i>	75– 88 (81.5)	Bp	Bb	Bb
<i>sc i</i>	55– 63 (59.6)	Bp	Bp	Bb
<i>sc e</i>	63– 76 (67.8)	Bp	Bp	Bb
<i>d</i> ₁	53– 60 (55.3)	Np	Np	Np
<i>d</i> ₂	58– 65 (61.4)	Np	Np	Np
<i>d</i> ₃	65– 78 (71.0)	Np	Np	Np
<i>d</i> ₄	13– 18 (15.5)	Bb	Bb	Bb
<i>d</i> ₅	18– 21 (19.1)	Bb	Bb	Bb
<i>l</i> ₁	53– 63 (56.8)	Bp	Bp	Bb
<i>l</i> ₃	30– 38 (35.0)	Bb	Bb	Bb
<i>l</i> ₅	310–330 (322.2)	Np	Np	Np
<i>g</i> ₃	43– 48 (46.4)	Np	Np	Np

* Observed under the microscope at a magnification 400×.

Male (Fig. 2). Measurements as in Table 1.

Dorsum (Fig. 2A). Setal arrangement, nature and length as in Fig. 1A and Table 2. Seta *vi* not barbed, with pointed tip; *ve* foliaceous and striated basally, barbed and tapered. Setae *sc i* and *sc e* the same in nature as *vi* and *ve*, respectively. Setae *d* 1 and 2 barbed, with notched tips; *d* 3 and 4 smooth, with notched tips. Seta *l* 1 the same in nature as *ve*; *l* 4 minute, with blunt tip. Three pairs of genital setae present; one pair expanded weakly, tips of which are not inflated.

Venter (Fig. 2B). Caudal projection bearing only setae *l* 5. Setation on coxal and inter-coxal regions as in female.

Gnathosoma and legs (Fig. 2A and B). Essentially as in female.

Materials. Holotype female, allotype male, 9 female and 5 male paratypes, 30 females and 1 larva collected from 6 specimens of *Apodemus giliacus* (Thomas, 1907) Kobayashi et Hayata, 1971, at Naganuma, central Hokkaido, Japan, September 18–20, 1974.

The holotype (NSMT-AC 8637) and allotype (NSMT-AC 8638) are deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo, Japan; a pair of the female and male paratypes each in Hokkaido Central Agricultural Experiment Station, Naganuma, Hokkaido, Japan, and in the collection of Meguro

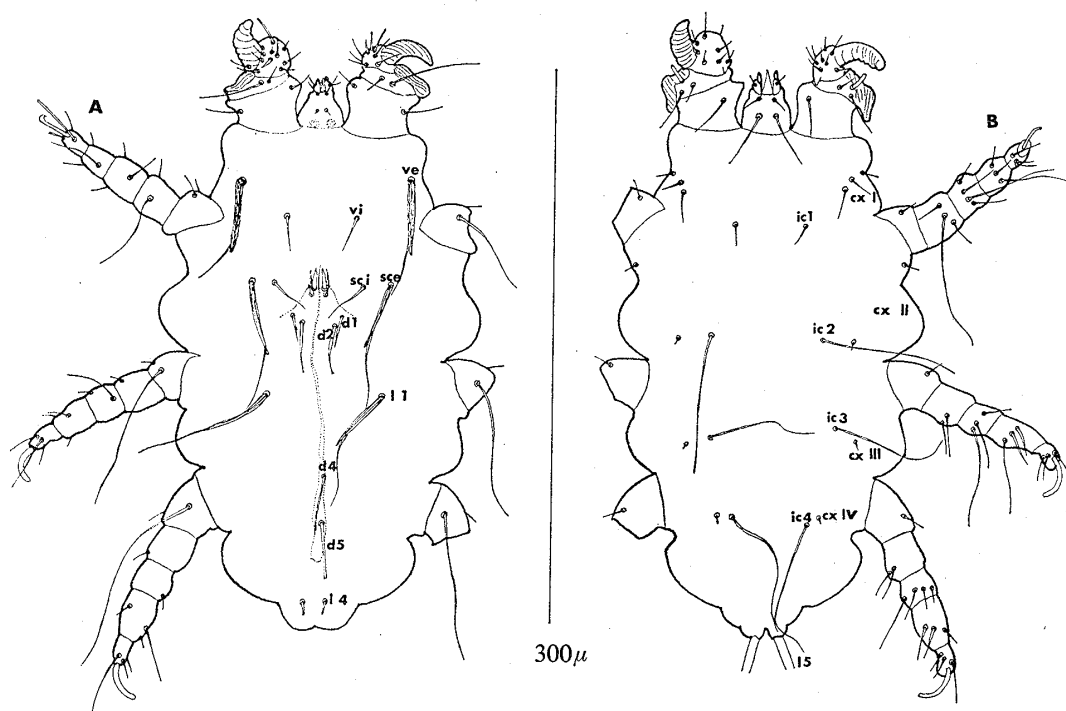


Fig. 2. Male of *Myobia kobayashii* spec. nov. — A, Dorsal view; B, ventral view.

Table 2
Measurements (ranges and means in parentheses) in micron of the body size and setal length, and the nature of the setae on the dorsum in the male.

<i>M. kobayashii</i> spec. nov.		Nature of setae		
Body length inclusive of gnathosoma	290–320 (303.3)	B: barbed; N: nude; b: with blunt tip*; p: with pointed tip*		
Body width	160–175 (170.0)	<i>M. kobayashii</i> spec. nov.	<i>M. apodemi</i>	<i>M. nodae</i>
Seta				
<i>vi</i>	12– 15 (12.9)	Np	Bb	Bb
<i>ve</i>	60– 73 (65.6)	Bp	Bb	Bb
<i>sc i</i>	18– 20 (18.5)	Np	Bb	Bb
<i>sc e</i>	68– 88 (78.0)	Bp	Bp	Bb
<i>d₁</i>	10– 20 (15.2)	Bb	Bb	Bb
<i>d₂</i>	28– 35 (31.3)	Bb	Bb	Bb
<i>d₄</i>	30– 35 (31.7)	Nb	Nb	Nb
<i>d₅</i>	28– 35 (32.1)	Nb	Nb	Nb
<i>l₁</i>	65– 78 (69.5)	Bp	Bp	Bb
<i>l₅</i>	290–330 (314.0)	Np	Np	Np

* Observed under a microscope at the magnification 400×.

Parasitological Museum, Tokyo (MPM coll. no. 19098); the other paratypes in the Department of Parasitology, Faculty of Medicine, Shinshu University, Matsumoto, Japan.

Remarks. *Myobia kobayashii* spec. nov., *M. apodemi* Uchikawa, 1973, and *M. nodae* Matuzaki, 1965, resemble one another. The setae *d* 1–3 are expanded, striated and smoothly tapered, and the setae *d* 4–5 and *l* 3 are barbed and with notched tips in the female of the three species. However, the nature of the other setae on the dorsum differs according to the species. Under a microscope at the magnification 400 \times , all tips of the vertical, scapular and lateral setae in the new species, and all but those of the vertical setae, *vi* and *ve*, which are notched, in *M. apodemi* are pointed, whereas all tips of these setae are distinctly notched in *M. nodae*. In the male, the setae *vi* and *sc i* are nude and tapered finely only in the new species; these setae are distinctly barbed and the tips are clearly notched in *M. apodemi* and *M. nodae*.

Mainly on the nature of the setae on the dorsum of both sexes, *M. kobayashii* spec. nov. parasitic on *Apodemus giliacus* is thought to be more closely related to *M. apodemi* occurring on *A. argenteus* than to *M. nodae* parasitizing *A. speciosus*.

The new species is named after Dr. Tsuneaki Kobayashi, who has greatly contributed to the clarification of the mammalian fauna of Japan.

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